

What is claimed is:

1. A multi-carrier CDMA communication apparatus comprising:

5 converting means for converting an information signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

10 generating means for generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

15 peak power detecting means for detecting peak power of said multi-carrier signal; and

transmitting means for transmitting only a multi-carrier signal whose peak power is not greater than a threshold.

2. A multi-carrier CDMA communication apparatus

20 comprising:

converting means for converting an information signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

25 generating means for generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

peak power detecting means for detecting peak power of said multi-carrier signal; and

regenerating means for regenerating a multi-carrier signal when said peak power exceeds a threshold by

- 5 multiplexing a signal for suppressing peak power instead of an information signal on at least one specific carrier out of said carriers.

3. The multi-carrier CDMA communication apparatus

- 10 according to claim 2, wherein said generating means multiplexes the information signal subjected to error correcting coding processing before spreading processing out of information signals with a plurality of sequences subjected to spreading processing on a specific carrier.

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4. The multi-carrier CDMA communication apparatus according to claim 2, wherein said regenerating means uses a random signal as a signal for suppressing peak power.

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5. The multi-carrier CDMA communication apparatus according to claim 2, wherein said regenerating means uses a signal whose amplitude is quasi-zero as the signal for suppressing peak power.

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6. The multi-carrier CDMA communication apparatus according to claim 2, further comprising clipping means for carrying out clipping processing on a multi-carrier

signal whose peak power exceeds a threshold out of the generated or regenerated multi-carrier signals.

7. The multi-carrier CDMA communication apparatus
5 according to claim 2, wherein said converting means comprising:

sequence converting means for converting an information signal with a single sequence to information signals with a plurality of sequences; and

- 10 spreading means for carrying out spreading processing on said respective information signals with a plurality of sequences.

8. The multi-carrier CDMA communication apparatus
15 according to claim 2, wherein said converting means comprising:

spreading means for carrying out spreading processing on the information signal with the single sequence; and

- 20 sequence converting means for converting an information signal with a single sequence subjected to spreading processing to information signals with a plurality of sequences.

- 25 9. A communication terminal apparatus equipped with a multi-carrier CDMA communication apparatus, said multi-carrier CDMA communication apparatus comprising:
converting means for converting an information

signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

generating means for generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

peak power detecting means for detecting peak power of said multi-carrier signal; and

transmitting means for transmitting only a multi-carrier signal whose peak power is not greater than a threshold.

10. A communication terminal apparatus equipped with a multi-carrier CDMA communication apparatus, said multi-carrier CDMA communication apparatus comprising:
converting means for converting an information signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

generating means for generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

peak power detecting means for detecting peak power of said multi-carrier signal; and

regenerating means for regenerating a multi-carrier signal when said peak power exceeds a threshold by

multiplexing a signal for suppressing peak power instead of an information signal on at least one specific carrier out of said carriers.

5 11. A base station apparatus equipped with a multi-carrier CDMA communication apparatus, said multi-carrier CDMA communication apparatus comprising:

10 converting means for converting an information signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

15 generating means for generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

peak power detecting means for detecting peak power of said multi-carrier signal; and

20 transmitting means for transmitting only a multi-carrier signal whose peak power is not greater than a threshold.

12. A base station apparatus equipped with a multi-carrier CDMA communication apparatus, said multi-carrier CDMA communication apparatus comprising:

25 converting means for converting an information signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

generating means for generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

5 peak power detecting means for detecting peak power of said multi-carrier signal; and

regenerating means for regenerating a multi-carrier signal when said peak power exceeds a threshold by multiplexing a signal for suppressing peak power instead
10 of an information signal on at least one specific carrier of said carriers.

13. A multi-carrier CDMA communication method comprising:

a converting step of converting an information signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

a generating step of generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers;

a peak power detecting step of detecting peak power of said multi-carrier signal; and

a transmitting step of transmitting only a multi-carrier signal whose peak power is not greater than a threshold.

14. A multi-carrier CDMA communication method comprising:

a converting step of converting an information signal with a single sequence to information signals with a plurality of sequences subjected to spreading processing;

- 5 a generating step of generating a multi-carrier signal by multiplexing the respective information signals with said plurality of sequences subjected to spreading processing on sequence-specific carriers; a peak power detecting step of detecting peak power of said
10 multi-carrier signal; and

- 15 a regenerating step of regenerating a multi-carrier signal when said peak power exceeds a threshold by multiplexing a signal for suppressing peak power instead of an information signal on at least one specific carrier of said carriers.